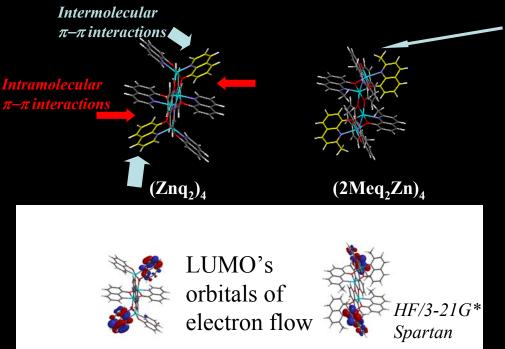
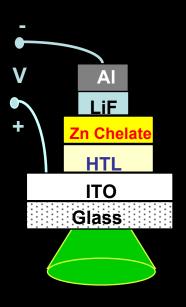
## Correlating Molecular and Electronic Structure to Organic Light-Emitting Device Performance Linda S. Sapochak, University of Nevada L, DMR-9874765

Organic light-emitting device (OLED) technology has matured over the last decade and the first consumer products are now available. However, application of this technology for energy efficient solid-state lighting requires detailed understanding of the materials at the molecular scale. Correlation of both the molecular and electronic structure to device performance for zinc organic chelates provides a molecular scale toolkit for lowering operating voltages.



Methylation creates steric hindrance leading to twisted structure with loss of favorable intra- and inter- molecular interactions necessary for good charge mobility and low operating voltages.



## CAREER - Investigations of Organic Electroluminescent Materials and Devices: A Program in Multidisciplinary Student Research

Linda S. Sapochak Department of Chemistry Univ. of Nevada Las Vegas

(Master Degree granting department)

7- M.S. Degree Students—graduated and currently pursuing Ph.D.

**Over 20 Undergraduate Student Researchers** supported or partially supported on this project.

(7 undergrad. students were coauthors on peerreviewed journal articles)

Includes undergraduate and graduate students from:

Chemistry, Biology, Physics, & Electrical Engineering

All students gained a broad research experience in molecular design, synthesis, material characterization, as well as device fabrication and testing.